

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

RECEIVED

OCT 31 1996

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of )

)  
Rulemaking to Amend Parts 1, 2, 21, and 25 )  
of the Commission's Rules to Redesignate )  
the 27.5 - 29.5 GHz Frequency Band, to )  
Reallocate the 29.5 - 30.0 GHz Frequency )  
Band, to Establish Rules and Policies for )  
Local Multipoint Distribution Service and )  
for Fixed Satellite Services )  
)

CC Docket No. 92-297

DOCKET FILE COPY ORIGINAL

**REPLY COMMENTS OF HUGHES COMMUNICATIONS GALAXY, INC.**

Hughes Communications Galaxy, Inc. ("Hughes") hereby submits its reply comments on (i) the Consolidated Comments of Lockheed Martin Corporation ("Lockheed"), (ii) the Opposition of TRW Inc. ("TRW"), (iii) the Opposition of AT&T Corp. ("AT&T"), and (iv) the Opposition of GE American Communications, Inc. ("GE Americom") filed in this proceeding.

**I. Motorola Stands Alone in Its Opposition to the Commission's Plan**

As noted by Hughes earlier in this proceeding, the band plan adopted in the First Report and Order is the culmination of more than three years of Commission and industry efforts. Although no one is entirely satisfied by the band plan, it is widely recognized as a balanced solution that affords all proposed services in the 28 GHz band the ability to operate on reasonable terms. Motorola's Petition for Reconsideration in this proceeding was therefore a surprising withdrawal of support for the industry-wide consensus plan. By its abrupt change of heart, Motorola sought to relitigate an issue

No. of Copies rec'd  
List ABCDE

024

that the Commission had definitively addressed, to attempt to secure for itself an advantage over other operators in the 28 GHz band.

To this day, however, Motorola remains alone in its request for reconsideration of the basic 28 GHz band segmentation plan to which virtually every party to this proceeding originally agreed.<sup>1</sup> There has been no opposition by any other party to the band plan adopted in the First Report and Order. Further, and perhaps most strikingly, the response to Motorola's Petition for Reconsideration has been unanimous, as every commenting party has voiced its strong opposition to Motorola's scheme to secure more spectrum for its satellite system at the expense of others.<sup>2</sup> The Commission should therefore swiftly and summarily dismiss Motorola's Petition for Reconsideration in this proceeding and commence licensing the various proposed systems in the 28 GHz band so that service to the public may commence promptly.<sup>3</sup>

---

<sup>1</sup> See Letter from Cellular Vision USA, Inc., AT&T, Hughes, Teledesic Corporation, Motorola, the University of Texas--Pan American, Phillips Electronics, Titan Information Systems, CellularVision of New York, L.P., M/A COM, Inc., RioVision of Texas, Inc., International CellularVision Association, CellularVision Technology and Telecommunications, L.P. and GE American Communications, Inc. to the FCC, CC Docket No. 92-297 (filed June 3, 1996); Letter from Hughes, AT&T, GE American Communications, Inc., and Motorola to the FCC, CC Docket No. 92-297 (filed June 6, 1996).

<sup>2</sup> See Opposition of AT&T Corp., CC Docket No. 92-297 (filed Oct. 21, 1996) ("AT&T Opposition"); Opposition of GE American Communications, Inc., CC Docket No. 92-297 (filed Oct. 21, 1996) ("GE Opposition"); Opposition of TRW Inc., CC Docket No. 92-297 (filed Oct. 21, 1996) ("TRW Opposition"); Consolidated Comments of Lockheed Martin Corporation, CC Docket No. 92-297 (filed Oct. 21, 1996) ("Lockheed Comments").

<sup>3</sup> Ironically, while Motorola offers no new evidence supporting its request to use the GSO FSS bands, it urges the FCC to dismiss Texas Instruments' Petition for Reconsideration because Texas Instruments has not provided the Commission with any new evidence supporting a proposed change to the Commission's rules. See Opposition in Response to Petition for Reconsideration of Motorola Satellite Communications, Inc., CC Docket No. 92-297 (filed Oct. 21, 1996) at 3-8 ("Motorola Opposition").

## II. Comments on the Lockheed Proposal

As noted above, the band plan adopted in the First Report and Order represents a careful balance, struck between the GSO FSS industry and the NGSO MSS industry, and achieved only after years of strenuous negotiation and compromise. Given this history, the Commission must closely scrutinize any suggestion to modify the rules adopted in the First Report and Order at this late date, and avoid potentially undermining that careful compromise.

In its comments, Lockheed asks the FCC to modify Section 25.258(b) of the First Report and Order in a number of ways.<sup>4</sup> First, Lockheed asks the Commission to include an alternative to the requirement contained in Section 25.258(b) that GSO FSS systems operate with frequencies and polarizations in the vicinity of NGSO MSS feeder link complexes that will minimize instances of harmful interference. Specifically, Lockheed suggests this rule be amended by adding an alternative approach: that GSO FSS and NGSO MSS systems also be allowed to operate with sufficient geographic separation to provide uplink beam isolation to minimize unacceptable interference. Lockheed's basis for this suggestion appears to be that while it may be technically possible for Lockheed's GSO system to use the same frequency and polarization as a NGSO system in the vicinity of that NGSO system,

---

<sup>4</sup> Lockheed's proposed modification to Section 25.258(b) reads as follows: "~~Licensed~~ GSO FSS systems shall, to the maximum extent possible, operate with frequency/polarization selections, in the vicinity of operational or planned NGSO/MSS feeder link earth stations complexes, or alternatively GSO FSS and NGSO MSS systems shall operate with geographic separation to provide uplink beam isolation, that will minimize instances of unacceptable interference to the GSO FSS and NGSO MSS space stations." Lockheed Comments at 4 n.6.

Lockheed will not actually do so. Rather, it will locate its large “gateway” earth stations far enough away from the NGSO system to ensure that the use of the same frequency and polarization will not be a problem.

Hughes believes that Lockheed’s proposed revision is *not* necessary and that Section 25.258(b), as adopted, does *not* preclude Lockheed’s use of geographic separation. Section 25.258(b) requires GSO FSS systems to operate with different frequency/polarizations from the NGSO MSS when such GSO FSS systems are operating in the *vicinity* of operational or planned NGSO MSS feeder link earth station complexes. Correspondingly, GSO FSS systems not operating in the *vicinity* of operational or planned NGSO MSS feeder link earth station complexes are not required to operate with different frequency/polarization selections. Thus, Lockheed is free under this rule to rely on geographic separation to achieve its goal. There is no need to change Section 25.258(b) to provide for geographic separation between NGSO MSS and GSO FSS earth stations.

In addition to the fact that it is not needed, Lockheed’s proposed change should be rejected because it would codify a sharing method that *does not work for most of the GSO FSS systems that have been proposed before the Commission*. As the record in this proceeding indicates, this method does *not* work for GSO FSS systems that consist of large numbers of ubiquitous antennas, like Hughes’ Spaceway and AT&T’s VoiceSpan.<sup>5</sup> The Lockheed alternative would sanction the existence of large, geographic separation, “exclusion zones” around the NGSO MSS feeder link complex

---

<sup>5</sup> Lockheed’s use of “gateway” earth stations is a unique element of its system design.

and therefore would raise the same unacceptable problems as would be created by Motorola's proposed "first come first served approach."<sup>6</sup> Specifically, if this change were adopted, GSO FSS systems like Spaceway could find that they are required to avoid use of 250 MHz in large portions of the country in order to provide the required geographic separation. Clearly, that result would be inconsistent with the Commission's determination that the GSO FSS needs access to 1,000 MHz of the 28 GHz band.

Second, Lockheed proposes an alternative approach to clarifying the ambiguity that TRW identified in its petition with respect to Section 25.258(b).<sup>7</sup> Lockheed asserts that the "objective of polarization selection in the vicinity of NGSO MSS feeder link earth stations is to minimize unacceptable uplink interference into *GSO FSS and NGSO MSS* space stations from transmitting earth stations employed by the other service."<sup>8</sup> As such, Lockheed proposes that Section 25.258(b) be modified to include a reference to both GSO FSS and NGSO MSS space stations. In its October 21, 1996 Opposition, Hughes indicated that it did not oppose an earlier, competing proposal made by TRW that the words "to the GSO FSS space station" be deleted from Section 25.258(b). Following a comparative review of the two proposals, however, Hughes believes that Lockheed's proposed is superior because it clearly spells out

---

<sup>6</sup> See Opposition of Hughes Communications Galaxy, Inc. to Petition for Reconsideration and Comments on Petition for Clarification, CC Docket No. 92-297 (filed Oct. 21, 1996) at 3-4 ("Hughes Opposition").

<sup>7</sup> See TRW Opposition.

<sup>8</sup> *Id.* at 4.

which systems are protected by the rule (i.e., GSO FSS and NGSO MSS space stations).

Third, Lockheed requests that the Commission clarify certain rules to specify that they protect the many GSO FSS systems now pending as applications before the Commission. While Hughes has no objection to the proposed Lockheed deletion of the word "Licensed" in section 25.258(b) or the word "authorized" in 25.258(d), Hughes does not believe that either change is necessary. As set forth more fully in Hughes' October 21, 1996 Opposition, Hughes believes that Lockheed's concerns can be met by making clear that the NGSO MSS coordination obligations in Section 25.258(d) apply with respect to all GSO FSS satellite systems for which the FCC has already assigned orbital locations.<sup>9</sup> As a practical matter, as long as an NGSO MSS feeder link applicant has an obligation to coordinate with the eight GSO FSS systems that were assigned locations in that Order, including Lockheed, there is no need to expand the scope of this rule.

### **III. Comments on the Opposition of TRW**

TRW joins with every other commentator in this proceeding in its opposition to Motorola's Petition for Reconsideration;<sup>10</sup> however, its position differs

---

<sup>9</sup> Hughes has expressed a concern about the requirement contained in Subsection (d) of Section 25.258 that NGSO MSS systems demonstrate an ability to share with authorized U.S. GSO FSS systems "operating" in the band. The Commission has already assigned orbital locations for GSO FSS systems in this band to a number of companies. See Assignment of Orbital Locations to Space Stations in the Ka-Band, Order, DA 96-708 (released May 6, 1996). It is the intention of everyone that these systems be protected in the NGSO MSS coordination process even though they are not yet operational. Hughes submits that the correct interpretation of this requirement is that it applies to all licensed U.S. GSO FSS systems, including those for which orbital assignments have been made, and respectfully requests that the Commission delete the word "operating" from this rule to avoid any ambiguity.

<sup>10</sup> See TRW Opposition at 5.

from Hughes' view that the requirement for "constant successive ground tracks" contained in Section 25.258(c) of the rules contained in the First Report and Order is an important part of the Commission's Order and overall band plan.<sup>11</sup> Significantly, TRW does not suggest that the Commission delete the repeating ground track requirement, but simply states its view that this requirement is not a critical part of the overall band plan. TRW's view is not surprising, given that by its own admission, the frequency with which TRW's Odyssey satellites cross through the geostationary arc is unaffected by the use of constant successive ground tracks.<sup>12</sup>

As noted in Hughes' October 21, 1996 Opposition, the use of repeating ground tracks is "an important tool that provides predictability with respect to NGSO MSS interference events and allows a GSO FSS operator to avoid interference, or predict with certainty when and where the interference will occur."<sup>13</sup> TRW does not "object to the general requirement stated in Section 25.258(c), because its plans to include that feature on [its] Odyssey [system]."<sup>14</sup> As noted many times in this proceeding, the First Report and Order is a delicately constructed compromise that maximizes the opportunities for spectrum use by multiple parties. Because no compelling justification has been advanced for changing Section 25.258(c), the Commission should decline to modify that rule as Motorola has proposed.

---

<sup>11</sup> See *id.*

<sup>12</sup> *Id.* at 6.

<sup>13</sup> Hughes Opposition at 9.

<sup>14</sup> *Id.* at 7.

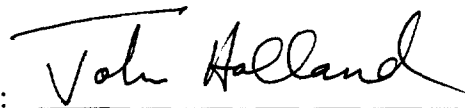
**IV. Conclusion**

For the reasons set forth above and in Hughes' October 21 Opposition, the Commission should summarily deny Motorola's Petition for Reconsideration and promptly begin licensing services in the 28 GHz band.

Respectfully submitted,

HUGHES COMMUNICATIONS  
GALAXY, INC.

By:



Of Counsel  
Scott B. Tollefsen  
Vice President, General Counsel  
& Secretary  
1500 Hughes Way  
Long Beach, CA 90810  
(310) 525-5150

John P. Janka  
John G. Holland  
LATHAM & WATKINS  
1001 Pennsylvania Avenue, N.W.  
Suite 1300  
Washington, D.C. 20004  
(202) 637-2200

October 31, 1996



Certificate of Service

I, Wanda J. Sisco, hereby certify that the foregoing Reply Comments of Hughes Communications Galaxy, Inc. was mailed first-class on October 31, 1996 to the following:

- \* The Honorable Reed E. Hundt  
Federal Communications Commission  
1919 M Street, N.W.  
Room 814  
Washington, DC 20554
- \* The Honorable James H. Quello  
Federal Communications Commission  
1919 M Street, N.W.  
Room 802  
Washington, DC 20554
- \* The Honorable Rachelle B. Chong  
Federal Communications Commission  
1919 M Street, N.W.  
Room 844  
Washington, DC 20554
- \* The Honorable Susan Ness  
Federal Communications Commission  
1919 M Street, N.W.  
Room 832  
Washington, DC 20554
- \* Mr. Donald Gips  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 827  
Washington, DC 20554

\*By hand delivery

\* Mr. Thomas S. Tycz  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 811  
Washington, DC 20554

\* Ms. Cecily C. Holiday  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 520  
Washington, DC 20554

\* Mr. Harold Ng  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 512  
Washington, DC 20554

\* Karl Kensinger, Esq.  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 521  
Washington, DC 20554

\* Ms. Giselle Gomez  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 507  
Washington, DC 20554

\* Jennifer Gilsenan, Esq.  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Room 511  
Washington, DC 20554

\*By hand delivery

Veronica M. Ahern, Esq.  
Nixon, Hargrave, Devans & Doyle, L.L.P.  
One Thomas Circle, N.W.  
Suite 700  
Washington, DC 20005

Mitchell Lazarus, Esq.  
Arent, Fox Kintner, Plotkin & Kahn  
1050 Connecticut Avenue, N.W.  
Suite 600  
Washington, DC 20036-5339

Gerald Musarra, Esq.  
Space & Strategic Missiles  
Lockheed Martin Corporation  
1725 Jefferson Davis Highway  
Arlington, VA 22202

Tom W. Davidson, P.C.  
Jennifer A. Manner, Esq.  
Akin, Gump, Straus, Hauer & Feld, L.L.P.  
1333 New Hampshire Avenue, N.W.  
Suite 400  
Washington, DC 20036

Leonard Robert Raish, Esq.  
Fletcher, Heald & Hildreth  
1300 N. 17th Street  
11th Floor  
Rosslyn, VA 22209-3801

Peter M. Connolly, Esq.  
Koteen & Naftalin  
1150 Connecticut Avenue, N.W.  
Washington, DC 20005

Joseph A. Godles, Esq.  
W. Kenneth Ferree, Esq.  
Goldberg, Godles, Winer & Wright  
1229 19th Street, N.W.  
Washington, DC 10036

John F. Beasley, Esq.  
William B. Barfield, Esq.  
BellSouth Corporation  
1155 Peachtree Street, N.E.  
Suite 1800  
Atlanta, GA 30309-3610

Thomas J. Keller, Esq  
Julian L. Shepard, Esq.  
Verner, Liipfert, Berhand, McPherson & Hand  
901 15th Street, N.W.  
Suite 700  
Washington, DC 20005

William A. Graven, Esq.  
Entertainment Made Convenient (Emc) USA, Inc.  
8180 Greensboro Drive  
Suite 1000  
McLean, VA 22102

Kristin A. Ohlson, Esq.  
Pacific Telesis Wireless  
Broadband Services  
2410 Camino Ramon  
Suite 100  
San Ramon, CA 94583

John M. Schill  
RioVision, Inc.  
P.O. Box 1065  
1800 East Highway 83  
Weslaco, TX 78596

John G. Lamb, Jr., Esq.  
Northern Telecom Inc.  
2100 Lakeside Boulevard  
Richardson, TX 75081-1599

Robert J. Miller, Esq.  
Gardere & Wynne, L.L.P.  
1601 Elm Street  
Suite 3000  
Dallas, TX 75201

Stephen L. Goodman, Esq.  
Hairprin, Temple, Goodman & Sugru  
1100 New York Avenue, N. W.  
Suite 650, East Tower  
Washington, DC 20005

Leonard J. Kennedy, Esq.  
Laura H. Phillipe, Esq.  
Dow, Lohnes & Albertson  
1255 23rd Street, N.W., Room 500  
Washington, DC 20037

Douglas Gray, Esq.  
Microwave Communications Group  
Hewlett-Packard Company  
1501 Page Mill Road, 4A-F  
Palo Alto, CA 94304

Frank Michael Panek, Esq.  
1000 W. Ameritech Center Drive  
Room 4H84  
Hoffman Estates, IL 60196

Cheryl A. Tritt, Esq.  
Diane S. Killory, Esq.  
Morrison & Foerster  
2000 Pennsylvania Avenue, N.W.  
Suite 5500  
Washington, DC 20006

J. Michael Rhoads, Esq.  
M3 Illinois Telecommunications Corp.  
P.O. Box 292557  
Kettering, OH 45429

Richard S. Wilensky, Esq.  
Middleberg, Riddle & Gianna  
2323 Bryant Street  
Suite 1600  
Dallas, TX 75201

Harold K. McCombs, Jr.  
Duncan, Weinberg, Miller & Pembroke  
1615 M Street, N.W.  
Suite 800  
Washington, DC 20036

Marilyn Mohrman-Gillis, Esq.  
Lonna M. Thompson, Esq.  
Association of America's Public Television Stations  
1350 Connecticut Avenue, N.W., Suite 200  
Washington, DC 20036

Paula A. Jameson, Esq.  
Gregory Ferenbach, Esq.  
Public Broadcasting Service  
1320 Braddock Place  
Alexandria, VA 22314

Jeffrey A. Krauss, Ph.D.  
Telecomm. & Tech. Policy  
17 W. Jefferson Street  
Suite 106  
Rockville, MD 20850

Paul J. Sinderbrand, Esq.  
Sinderbrand & Alexander  
888 16th Street, N.W. 5th Floor  
Washington, DC 200064103

C. Rowe, Esq.  
New England Tel. & Tel. Co. and New York Telephone  
1111 Westchester Avenue  
White Plains, NY 10604

John G. Raposa, Esq.  
HQE3J27  
GTE Service Corporation  
P.O. Box 152092  
Irving, TX 75015-2092

Gail L. Polivy, Esq.  
GTE Service Corporation  
1850 M Street, N.W.  
Suite 1200  
Washington, DC 20036

Daniel L. Brenner, Esq.  
Loretta P. Polk Esq.  
1724 Massachusetts Avenue, N.W.  
Washington, DC 20036

Edward A. Keible, CEO  
Endgate Corporation  
321 Soquel Way  
Sunnyvale, CA 94086

Robert A. Mazer, Esq.  
Jerold L. Jacobs, Esq.  
Rosenman & Colin  
1300 19th Street, N.W.  
Suite 200  
Washington, DC 20036

Philip Malet, Esq.  
Panatelis Mchaeloupoulos, Esq.  
Steptoe & Johnson  
1330 Connecticut Avenue, N.W.  
Washington, DC 20036

Norman P. Leventhal  
Stephen D. Baruch  
Leventhal, Senter & Lerman  
2000 K Street, N.W., Suite 600  
Washington, D.C. 20006

Charles P. Fetherstun, Esq.  
David G. Richards, Esq.  
1133 21st Street, N.W.  
Suite 900  
Washington, DC 20036

Lon C. Levin, Esq.  
American Mobile Satellite Corp.  
10802 Parkridge Boulevard  
Reston, VA 22091

Charles T. Force, Esq.  
Assoc. Admin. for Space Communications  
NASA Headquarters  
Washington, DC 20546

Philip V. Otero, Esq.  
Alexandria P. Humphrey, Esq.  
GE American Communications  
1750 Old Meadow Road  
McLean, VA 22101

Judith R. Maynes, Esq.  
Elaine R. McHale, Esq.  
AT&T Corporation  
295 N. Maple Avenue  
Basking Ridge, NJ 07920

Peter A. Rohrbach, Esq.  
Karis A. Hastings, Esq.  
Hogan & Hartson, L.L.P.  
555 Thirteenth Street, N.E.  
Washington, DC 20004

Thomas J. Keller, Esq.  
Julian L. Shepard, Esq.  
Verner, Liipfert, Bernhard, McPherson & Hand  
901 15th Street, N.W.  
Suite 700  
Washington, DC 20005

Andrew D. Lipman, Esq.  
Margaret M. Charles, Esq.  
Swidler & Berling, Chartered  
3000 K Street, N.W.  
Suite 300  
Washington, DC 20007



Perry W. Haddon  
Vice President  
Ghz Equipment Company, Inc.  
1834 E. Baseline Road  
Suite 202  
Tempe, AZ 85283-1508

Michael R. Gardner, Esq.  
1150 Connecticut Avenue, N.W.  
Suite 710  
Washington, DC 20036

Kathleen Q. Abernathy, Esq.  
David A. Gross, Esq.  
1818 N Street, N.W.  
Suite 800  
Washington, DC 20036

Philip L. Verveer, Esq.  
Michele R. Pistone, Esq.  
Willkie, Farr & Gallagher  
1155 21st Street, N.W.  
Suite 600  
Washington, DC 20036-3384

Leslie A. Taylor, Esq.  
Leslie Taylor Associates  
6800 Carlynn Court  
Bethesda, MD 20817-9341

Mr. Warren Richards  
U.S. Department of State  
2201 C Street, N.W.  
4th Floor/CIP  
Washington, DC 20520

James G. Pachulski, Esq.  
Bell Atlantic Telephone Companies  
1320 North Court House Road  
8th Floor  
Arlington, VA 22201

Michael D. Kennedy, Esq.  
Barry Lambergman, Esq.  
Motorola, Inc.  
1350 I Street, N.W.  
Washington, DC 20006

James G. Ennis, Esq.  
Patricia A. Mahoney, Esq.  
Iridium, Inc.  
1401 H Street, N.W.  
Washington, DC 20005

Mr. William Hatch  
NTIA  
Department of Commerce  
14th Street & Constitution Avenue, N.W.  
Washington, DC 20230

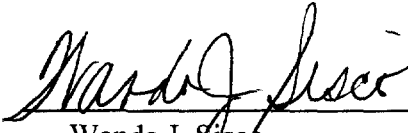
James P. Noblitt  
Vice President, General Manager  
Boeing Defense & Space  
Missiles & Space Division  
P.O. Box 3999, MS 8C-30  
Seattle, WA 96124-2499

Doris S. Freedman, Esq.  
Barry Pineles, Esq.  
Office of Advocacy  
U.S. Small Business Administration  
Washington, DC 20416

Charles F. Newby, Vice President  
Titan Information Systems  
3033 Science Park Road  
San Diego, CA 92121-1199

Richard H. Shay, Esq.  
Orion Network Systems, Inc.  
2440 Research Boulevard  
Suite 400  
Rockville, MD 20850

Robert L. Pettit, Esq.  
Michael K. Baker, Esq.  
Wiley, Rein & Fielding  
1776 K Street, N.W.  
Washington, DC 20006



---

Wanda J. Sisco